

## **Pneumonia in Rural Thailand: Comprehensive Surveillance in a New Era**

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**Background:** Pneumonia is a reportable disease in many countries, but passive surveillance, unstandardized methods, and lack of radiographic confirmation often limit the value of the data for guiding control programs. In August 2002, The Thai Ministry of Public Health, with support from the U.S. CDC, launched active, population-based surveillance for radiographically confirmed pneumonia. **Methods:** Residents of Sakaeo Province are the surveillance population (N=438,557) and pneumonia severe enough to require hospitalization the surveillance entity. Full-time surveillance officers conduct active case ascertainment at every hospital in the province, and routine audits ensure complete and accurate reporting. A case of pneumonia is defined as acute infection with signs or symptoms of respiratory tract infection and evidence of pneumonia on chest radiograph taken within 48 hours of admission. An independent panel of radiologists reviews digital images of all radiographs for evidence of pneumonia. **Results:** From Sept 2002 to Apr 2003, 276 patients met the case definition, of whom 52% were male and 35% were children under 5 years. At admission, 76% were tachypneic, 44% had documented temperature >38.0°, 49% had leukocytosis (WBC>11,000 cells/μl), and 6% had leukopenia (WBC<4,000 cells/μl). The median length of hospital stay was 5 days (range, 1 to 47), 39% received supplemental oxygen, 8% were intubated, and 8.3% died. Of all suspect pneumonia patients, 56% had a chest x-ray, and 79% of chest x-rays had definite or probable pneumonia according to the radiologists. Therefore, the minimal annual incidence of radiographically confirmed pneumonia was 143 per 100,000 persons and 639 per 100,000 children under 5. **Conclusions:** Pneumonia is a significant public health problem in Thailand and this surveillance system allows precise assessment and monitoring of radiologically confirmed pneumonia. Introduction of virologic testing to this surveillance system beginning in June 2003 will permit monitoring of the incidence of infection from SARS-associated coronavirus, human metapneumovirus, influenza, respiratory syncytial virus, and other agents of regional and global public health concern.

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